

Eelgrass Restoration Project Update 7-07-05

The 2005 field season is well underway, after being delayed by inclement weather. We spent early spring finishing up the permitting process and planning for the year's plantings. Those plantings are underway, and we have been involved in or have planned a number of volunteer and community outreach and education activities.

Permitting:

The preliminary transplant site selection process and subsequent GIS mapping of potential sites allowed us to determine in which towns our work might take place. All necessary permit applications were filed including Notices of Intent with the seven (7) affected towns and DEP. Orders of Conditions have been received from all seven towns and recorded with the appropriate County Registries of Deeds. Conditional approval has been received from Mass. Historical Association, Board of Underwater Archeological Resources, and the Army Corps of Engineers, pending final site selection.



Hermit crabs are just one of many species that make an eelgrass bed their home.

Spring 2005 Field Season:

Spring 2005 field work has involved further evaluation of areas deemed suitable for eelgrass by the PTSI (see March 4, 2005 update for explanation of PTSI). Testing involved taking sediment cores to determine grain size composition relative to that in existing eelgrass beds, and further testing of sediment at UMass Boston for sulfides and Total Organic Carbon (TOC). Twelve sites were selected for test transplanting based on these and previous evaluations (see chart below).

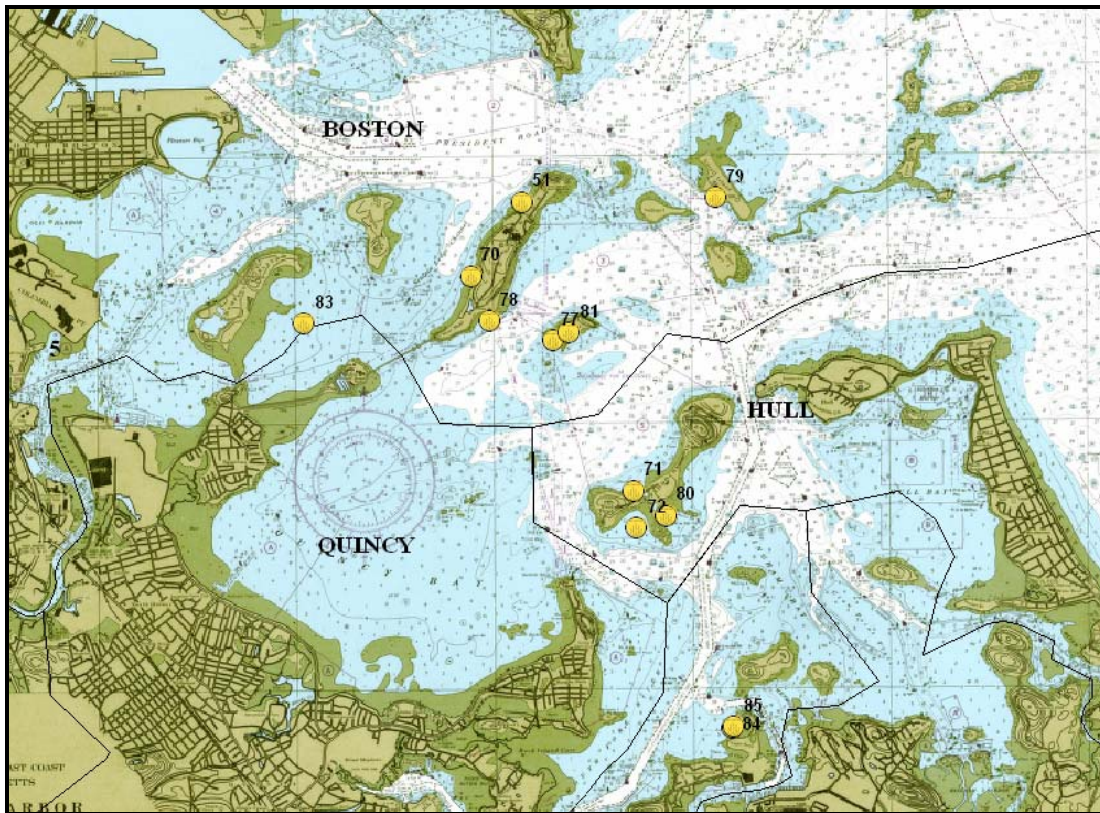


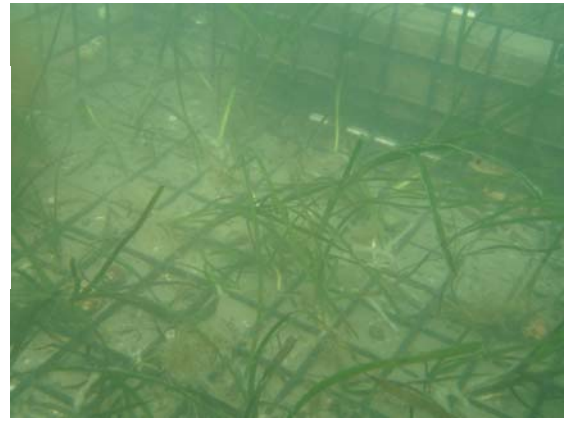
Chart of Boston Harbor with test transplant sites planted in May 2005 indicated by yellow circles.

Test transplants were accomplished by first harvesting eelgrass shoots from donor sites in Revere and Nahant. Wire mesh "cages" called TERFsTM (24" square) were used to plant shoots. Twenty-five (25) pairs of shoots were tied to each TERFTM and four (4) TERFsTM were deployed in a square pattern at each of the twelve sites. These sites were monitored and evaluated for survival rates. In addition, shoot density counts were taken along transects in harvested beds off Revere and Nahant, and in unharvested control sites to evaluate whether harvesting has any negative impact on existing beds.

The twelve test transplant sites were monitored for survival and general health. The four best sites were selected for further planting (site numbers 51, 77, 72, 84/85 in the chart above). These are off Long, Peddocks, and Rainford Islands, and in Lower Neck Cove in Weymouth).



Eelgrass in an existing bed (left) and planted in a TERF™ (right). Plants will eventually root and TERF™ will be removed.



Volunteer and community outreach activities

Volunteer scuba divers, National Park Service liaisons, and two local high schools participated in a harvesting and test-transplanting effort in Boston Harbor in early May. Revere High School provided assistance with a participating science teacher and several students during the harvesting segment on the first day and Odyssey High School of South Boston provided two teachers and a class of eight students on the second day when TERF™ preparation and planting were undertaken on Long Island.



Volunteers from Odyssey High School tie eelgrass shoots to TERFs in May 2005

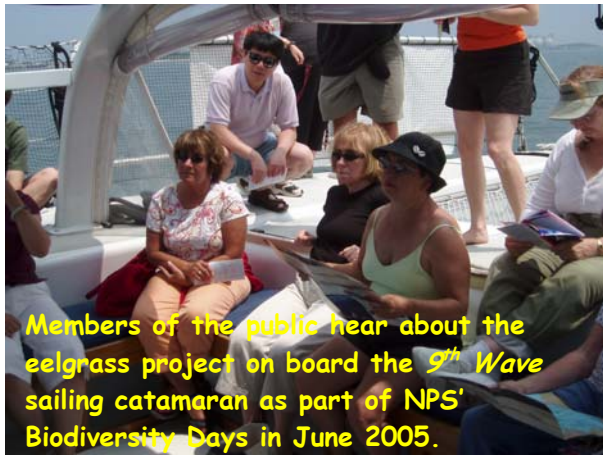
An Odyssey High School GIS teacher spent a morning working with us to learn how to use our eelgrass site selection model as a project in her classes. Data were transferred to her to allow use of the same GIS overlay maps and parameter/site scoring used in our restoration activities. In addition, *Marine Fisheries* staff spent a day at Odyssey High School, giving a presentation on the eelgrass restoration project to two GIS classes, a science class, and the after-school program. The after-school group designed a logo for t-shirts for volunteers.



T-shirt logo designed by Odyssey High School after-school group.



Diver deploying a TERF™ at a transplant site in Boston Harbor, May 2005



Members of the public hear about the eelgrass project on board the 9th Wave sailing catamaran as part of NPS' Biodiversity Days in June 2005.

Collaboration with the National Park Service included a presentation on our Boston Harbor restoration activities as part of their "Biodiversity Days." This involved a boat cruise in the Harbor with ~40 members of the public. An explanation of our project was presented and a diver equipped with underwater video feed swam about an eelgrass bed.

On June 26, 13 volunteers from Single Volunteers Boston helped plant 3000 eelgrass shoots at 3 of the 4 sites selected from the original twelve (the Rainford site was eliminated due to very heavy boat use and anchoring, which was not apparent until the weather finally improved). Shoots harvested previously in Nahant by *MarineFishes* divers were tied to TERFs and string frames. Volunteer and *MarineFishes* divers then deployed the frames, and hand planted some shoots, in order to test different planting techniques and patterns. One more site will be planted in the coming weeks to make up for the eliminated Rainford site.



Volunteers sort eelgrass shoots.



Volunteers carry completed frames to the boat for planting.



Volunteers show off their hard-earned t-shirts.

On June 25, *MarineFishes* staff attended a fishing derby sponsored by the Quincy Beaches and Coastal Commission. We distributed Eelgrass Project literature and talked to the public about the project. The Commission showed great interest in our work and has asked us to provide another presentation in the fall to their membership (date to be determined).

Plans for remainder of the summer

The three sites planted on June 26 will be monitored over the summer for survival. A fourth site was planted on July 7. The best sites will be selected for a larger scale transplant in the fall. We will also continue to monitor the rest of the original 12 sites to determine if any warrant further planting; exploration for potential new sites will continue. Additional shoot density counts will be taken in the donor beds to determine harvest impact, if any. In late July/early August we will harvest flowering

shoots and keep them in tanks until they drop their seeds. These seeds will be planted using different techniques in the fall. Our next large-scale harvest and planting will take place in late September/October. Details on these tasks and the need for volunteers will emerge as the time gets closer.

We will also continue our outreach efforts. Biologists will give a “brown bag lunch” talk at the New England Aquarium (NEA) in the coming weeks, as well as collaborate on incorporating information about our restoration effort into NEA’s existing display about Boston Harbor. We will also offer technical advice about NEA’s live eelgrass segment of the display. In July we plan to take a group of students from the Cohasset Center for Student Coastal Research into Cohasset Harbor to tell them about the project and show them an eelgrass bed with our new underwater video camera. We continue to welcome invitations from local watersheds, children’s camps, teacher training groups, etc. to give presentations about our restoration program.